The method last employed is in principle the same as the combustion method; merely, here, the products of incomplete combustion of the fuel have been considered direct. One obtains, however, simultaneously, approximately a value for the H originating from decomposition of steam, and can in the foregoing case come to the conclusion that the steam-air gas production has been very well conducted, as the hydrogen content is found to be approximately right. The latter should contain 0'21 cubic metre H according to the composition of the theoretical producer gas, whilst 0*38 cubic metre was found here. However, one cannot always regard the figure thus obtained as correct, as will be shown later.

As to the properties of the distillation gas, the figure 0*67 cubic metre Hd must be corrected, since N as well as O does not entirely originate from air and water, but small amounts thereof are furnished by the fuel. But these amounts are unknown, and therefore their further calculation can only be approximately undertaken, and this only by two ways—by utilisation of the values for the C-poorest and C-richest distillation gas which are taken as limiting values. The greater or lesser agreement-of the same will then furnish a measure whether the mean value merits confidence, and if it is worth while to follow the calculation further.

Thus, first, there is the value of Hd to be corrected. The correction amounts to:—

For the C-poorest distillation gas

-J-15'6 per cent. corr.=M56x 0-67=0-77 cubic metre H&

For the C-richest distillation gas

+9 per cent.

Hd corr. = l-09xO-67=0-73 cubic metre lid.

Therewith will be gasified, as distillation gas from (26),

C=O20xO77 cubic metre Hd =

0-23 X 0-73=0-168 kilogramme O,

0154 kilogramme C and there will belong to the gasification into steam-air gas, 1—0-154=0-846 kilogramme 0 I 0'832 kilogramme 0.

The combustible value of the gas would be

Calories.

Distillation gas 0*77 Hx

3,850 . . . . = 2,964

Steam-air gas from 0*846 kilogramme Cx 6,200 = 5,245

Total theoretical combustible value.....8,209

Calories.

Distillation gas 0-73 Hx

4,060 . . .' . = 2,963

Steam-air gas from 0*832 kilogramme 0x6,200 = 5,158

Total theoretical combustible value. 8,121